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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/755,516	01/04/2001	Eric W. Schieve	AMAT-5320	5078

7590 05/16/2002  
Patent Counsel, MS/2061  
Legal Affairs Dept.  
Applied Materials, Inc.  
3050 Bowers Avenue  
San Clara, CA 95054

EXAMINER

MOORE, KARLA A

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 05/16/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

MF-2

## Office Action Summary

Application No.

09/755,516

Applicant(s)

SCHIEVE ET AL.

Examiner

Karla Moore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. Claims 9-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 9 reads (page 15, line 6), "the mechanical means supporting the second chamber against the **load-lock chamber** ...". This limitation is inconsistent with the specification, drawings and other claims. Examiner believes it to be a mistake and that "load-lock chamber" should read "transfer chamber". Correction and/or clarification is requested.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,076,205 to Vowles et al. and further in view of U.S. Patent No. 6,022,185 to Mokuo.

4. Vowles discloses the apparatus substantially as claimed. The apparatus for processing multiple semiconductor wafers comprises: a transfer chamber (16), a first processing chamber (24) in fixed relation to the transfer chamber and having a wafer holding platform (56, 58) with a center, a second processing chamber (26; column 2, rows 57-61) mounted in adjustable relation to the transfer chamber and to a first chamber having a second wafer holding platform and a robot (36) rotatably mounted within the transfer chamber. The first and second chambers are closely spaced self-contained units supported in a cantilever fashion from a wall of the transfer chamber (see Figure 1), the chambers and the platforms being adapted to simultaneously process wafers using edge purging, due to alignment mechanisms (column 3, row 60 through column 4, row 2) used to accurately place the wafer on the holding platform.

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The apparatus further comprises a mechanism (74,76,78, 80,82; column 3, rows 56-62) for adjustably mounting the second chamber in relation to the first chamber and to the transfer chamber, wherein the mechanism comprises a plurality of position adjustments (84,86,88) for the second chamber (column 3, rows 65-68), a first plate (70) fastened to the wall of the transfer chamber and a second a second plate (72) fastened to the wall of the second chamber. Vowles et al. also teach the use of slit valves adjacent the transfer passageway for sealing the controlled environments within the transfer chamber and the first/second chambers (column 2, row 68-column 3, row 4 and column 4, rows 3-9).

5. However, while Vowles et al. do disclose a robot rotatably mounted within the transfer chamber, they fail to teach the use of a robot having first and second wafer holding arms spaced parallel to each other for inserting a pair of wafers simultaneously into the first and second chambers.

6. Mokuo discloses a substrate rotatable transferring device including two parallel support arms (Figure 3, 20; column 3, rows 25-33) for the purpose of transferring plural wafers in and out of chambers at the same time to thereby increase throughput (column 1, rows 59-62).

7. It would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to have included two support arms in Vowles et al. in order to transfer plural wafers in and out of chambers at the same time to increase throughput, as taught by Mokuo.

8. Claims 4-5, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vowles et al. and Mokuo as applied to claims 1-3 above, and further in view of U.S. Patent No. 5,611,861 to Higashi.

9. Vowles et al. and Mokuo disclose an apparatus for processing multiple semiconductor wafers substantially as claimed and as described above.

10. However, Vowles et al. and Mokuo fail to teach the use of a bellows assembly sealed between a first plate and second plate and a hermetically sealed wafer passageway between the chambers nor are means for securing the relative positions of the plates once adjustments thereto have been effected disclosed.

11. Higashi teaches the use of a coupling system comprising bellows assembly (Figures 4A and 4B, 17a and 17b; column 3, rows 46-50) and means for securing (column 7, rows 4-11; column 9, rows 25-27) the relative positions of the plates for the purpose of connecting and disconnecting the valves,

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allowing communication between each of the process chambers and the transfer chamber in a hermetical sealed fashion.

12. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a bellows assembly and means for securing the relative positions of the plates in Vowles et al. and Mokuo in order to connect and disconnect the valves communicating with each of the process chambers and the transfer chamber in a hermetical sealed fashion as taught by Higashi.

13. Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vowles et al., Mokuo and Higashi as applied to claims 4-5, 7 and 9 above, and further in view of U.S. Patent No. 4,854,611 to Press.

14. Vowles et al., Mokuo and Higashi (the prior art) disclose the claimed apparatus substantially as claimed and as described above.

15. However, the prior art fails to disclose a mechanism for adjustably mounting the second chamber, wherein the first and second plates are hinged together along a bearing line such that position adjustments thereto can be made in the "X", "Y" and "Z" directions and for thereafter rigidly fastening in place such position.

16. Press discloses a bellows assembly comprising a first plate (10) and a second plate (11) with a bellows element (12) sealed between the plates providing for relative movement in the "X", "Y" and "Z" directions (Figures 1A-C) for the purpose of accommodating the three categories of strain to which a bellows assembly can be subjected and to which it is required to accommodate—axial travel, misalignment and angular travel (column 2, rows 59-64). Press further discloses means for rigidly fastening in place such position for the purpose of minimizing the possibility of bellows failure in use (column 1, rows 31-33).

17. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided relative movement in the "X", "Y" and "Z" directions in the prior art for the purpose of accommodating the three categories of strain to which a bellows assembly can be subjected and to which it is required to accommodate as taught by Press and to have provided means for rigidly

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fastening in place such position in the prior art for the purpose of minimizing the possibility of bellows failure in use as taught by Press.

**Conclusion**

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 703.305.3142. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703.308.1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9310 for regular communications and 703.872.9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0661.

km  
May 13, 2002

  
GREGORY MILLS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700